

**We claim:**

1. A novel process for the decolorization of colored effluents, which comprises:
  - a) culturing a filamentous, non-sporulating fungus bearing MTCC deposit number 5159 having the characteristics such as herein described in a conventional nutrient medium optionally prepared with sea water with salinity ranging from 25 to 35 parts per thousand optionally containing assimilable C and N source for a period of 6 to 12 days to obtain a fungal biomass;
  - b) separating the fungal biomass from the culture medium of step [a] to obtain cell-free supernatant;
  - c) freezing the cell-free supernatant obtained in step [b] for 12 to 24 hours followed by thawing thereof to obtain a precipitate containing the exopolymeric substance [EPS] and a supernatant;
  - d) precipitating the remaining EPS from the supernatant obtained in step [c] with methanol;
  - e) pooling and centrifuging the precipitates obtained in step [c] and [d] to obtain exopolymeric substance;
  - f) contacting the colored effluents optionally in a diluted form either with the fungal biomass obtained in step [a] or cell-free supernatant obtained in step [b] or the exopolymeric substance as obtained in step [f] for a period ranging from 6 hours to 6 days at temperature ranging from 30 to 60 degree C and pH ranging from 3 to 6 to get decolorized water.
2. A process as claimed in claim 1, wherein the colored effluents are preferably selected from the group consisting of black liquor from paper and pulp industries, molasses spent wash from distilleries, textile dye waste-waters and synthetic dyes.
3. A process as claimed in claim 1, wherein the fungal biomass is cultured for at least 6 days to get maximum decolorization of colored effluents.
4. A process as claimed in claim 1, wherein the carbon source used for growing the fungus is preferably selected from glucose, fructose, sorbitol and starch.
5. A process as claimed in claim 1, wherein the concentration of the carbon source for growing the fungus is at least 1%.

6. A process as claimed in claim 1, wherein the nitrogen source used for growing the fungus is preferably selected from peptone and ammonium tartarate.
7. A process as claimed in claim 1, wherein the concentration of the nitrogen source for growing the fungus is at least 0.02%.
- 5 8. A process as claimed in claim 1, wherein the medium for growing the fungus is preferably prepared with seawater having 25 parts per thousand salinity.
9. A process as claimed in claim 1, wherein the medium is optionally supplemented with 1% diluted textile mill effluent or copper sulphate at 2 mM concentration.
10. A process as claimed in claim 1, wherein the fungal biomass is cultured for a  
10 period of at least 6 days.
11. A process as claimed in claim 1, wherein the dilution of the colored effluents is done in the range of 10 to 20%.
12. A process as claimed in claim 1, wherein contacting of the colored effluents with fungal biomass is carried out for a period of preferably 2 to 6 days at a  
15 temperature preferably 30 degree C and pH preferably 6.0.
13. A process as claimed in claim 1, wherein contacting of the colored effluents with the cell-free supernatant is carried out for a period of preferably 12 hours at a temperature preferably 60 degree C and pH preferably 6.0.
14. A process as claimed in claim 1, wherein contacting of the colored effluents with  
20 the exopolymeric substance is carried out for a period of preferably 24 hours at a temperature preferably 60 degree C and pH preferably 6.0.
15. A process as claimed in claim 1, wherein separation of the fungal biomass from the culture medium is carried out preferably by vacuum filtration or centrifugation.
16. A process as claimed in claim 1, wherein the fungal biomass is preferably  
25 immobilized on cubes or sheets of polyurethane foam or any other conventional known immobilization support.
17. A fungal strain MTCC 5159 with the following characteristics:
  - a) non-sporulating fungus;
  - b) grows as white, fluffy mycelium on malt extract medium;
  - 30 c) exhibits 99% homology to an unidentified basidiomycete species AY187277;